

CLAIMS

1. A chromoprotein derived from *Cnidopus japonicus* having the following properties:

- (1) the absorption maximum wavelength is 559 nm and the fluorescence maximum wavelength is of 578 nm;
- (2) the molar absorption coefficient is 61,150 at 559 nm;
- (3) the quantum yield is less than 0.01; and
- (4) the pH sensitivity of light-absorbing properties is stable at between pH 4 and pH 10.

2. A chromoprotein having either one of the following amino acid sequences:

- (a) the amino acid sequence shown in SEQ ID NO: 1; and
- (b) an amino acid sequence comprising a deletion, substitution and/or addition of one or several amino acids with respect to the amino acid sequence shown in SEQ ID NO: 1, and having light-absorbing properties.

3. A DNA encoding the protein of claim 1 or 2.

4. A DNA of either one of followings:

- (a) DNA encoding the amino acid sequence shown in SEQ ID NO: 1; and
- (b) DNA encoding an amino acid sequence, which comprises a deletion, substitution and/or addition of one or several amino acids with respect to the amino acid sequence shown in SEQ ID NO: 1, and has light-absorbing properties.

5. A DNA having either one of the following nucleotide sequences:

- (a) the nucleotide sequence shown in SEQ ID NO: 2; and
- (b) a nucleotide sequence comprising a deletion, substitution and/or addition of one or several nucleotides with respect to the nucleotide sequence shown in SEQ ID NO: 2, and encoding a protein having light-absorbing properties.

6. A recombinant vector having the DNA of claim 4 or 5.

7. A transformant having the DNA of claim 4 or 5 or the recombinant vector of claim 6.
8. A fusion protein composed of the chromoprotein of claim 1 or 2 and another protein.
9. A method for analyzing a physiologically active substance, which is characterized in that the FRET (fluorescence resonance energy transfer) method is applied using the chromoprotein of claim 1 or 2 as an acceptor protein.
10. A light-absorbing reagent kit comprising the chromoprotein of claim 1 or 2, the DNA of any of claims 3 to 5, the recombinant vector of claim 6, the transformant of claim 7, or the fusion protein of claim 8.